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EXAMINER

WONG, EDNA

ART UNIT PAPER NUMBER

1753

DATE MAILED: 07/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/712,458 | Applicant(s) FRANZ, WOLF-DIETER | |
| | Examiner Edna Wong | Art Unit 1753 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

This is in response to the Amendment dated May 25, 2006. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Arguments

Claim Objections

Claim 10 has been objected to because of minor informalities.

The objection of claim 10 has been withdrawn in view of Applicant's amendment.

Claim Rejections - 35 USC § 112

Claims 1, 3-7 and 19 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rejection of claims 1, 3-7 and 19 under 35 U.S.C. 112, second paragraph, has been withdrawn in view of Applicant's amendment.

Claim Rejections - 35 USC § 103

I. Claims 1, 5-11 and 14-15 have been rejected under 35 U.S.C. 103(a) as being unpatentable over JP 60-208495 ('495) in combination with JP 30-27175 ('175) and DE 2,204,156 ('156).

The rejection of claims 1, 5-11 and 14-15 under 35 U.S.C. 103(a) as being

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unpatentable over JP 60-208495 ('495) in combination with JP 30-27175 ('175) and DE 2,204,156 ('156) has been withdrawn in view of Applicant's remarks.

II. Claims **3 and 4** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 60-208495** ('495) in combination with **JP 30-27175** ('175) and **DE 2,204,156** ('156) as applied to claims 1, 5-11 and 14-15 above, and further in view of **Holdermann et al.** (US Patent No. 5,591,565).

The rejection of claims 3 and 4 under 35 U.S.C. 103(a) as being unpatentable over JP 60-208495 ('495) in combination with JP 30-27175 ('175) and DE 2,204,156 ('156) as applied to claims 1, 5-11 and 14-15 above, and further in view of Holdermann et al. has been withdrawn in view of Applicant's remarks.

III. Claim **12** has been rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 60-208495** ('495) in combination with **JP 30-27175** ('175) and **DE 2,204,156** ('156) as applied to claims 1, 5-11 and 14-15 above, and further in view of **DE 35 39 318** ('318).

The rejection of claim 12 under 35 U.S.C. 103(a) as being unpatentable over JP 60-208495 ('495) in combination with JP 30-27175 ('175) and DE 2,204,156 ('156) as applied to claims 1, 5-11 and 14-15 above, and further in view of DE 35 39 318 ('318) has been withdrawn in view of Applicant's remarks.

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IV. Claim 13 has been rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 60-208495 ('495)** in combination with **JP 30-27175 ('175)** and **DE 2,204,156 ('156)** as applied to claims 1, 5-11 and 14-15 above, and further in view of **DE 35 39 318 ('318)**.

The rejection of claim 13 under 35 U.S.C. 103(a) as being unpatentable over JP 60-208495 ('495) in combination with JP 30-27175 ('175) and DE 2,204,156 ('156) as applied to claims 1, 5-11 and 14-15 above, and further in view of DE 35 39 318 ('318) has been withdrawn in view of Applicant's remarks.

V. Claim 16 has been rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 60-208495 ('495)** in combination with **JP 30-27175 ('175)** and **DE 2,204,156 ('156)**.

The rejection of claim 16 under 35 U.S.C. 103(a) as being unpatentable over JP 60-208495 ('495) in combination with JP 30-27175 ('175) and DE 2,204,156 ('156) has been withdrawn in view of Applicant's remarks.

VI. Claim 17 has been rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 60-208495 ('495)** in combination with **JP 30-27175 ('175)** and **DE 2,204,156 ('156)**.

The rejection of claim 17 under 35 U.S.C. 103(a) as being unpatentable over JP 60-208495 ('495) in combination with JP 30-27175 ('175) and DE 2,204,156 ('156) has been withdrawn in view of Applicant's remarks.

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VII. Claim 18 has been rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 60-208495 ('495)** in combination with **JP 30-27175 ('175)**, **DE 2,204,156 ('156)** and **DE 35 39 318 ('318)**.

The rejection of claim 18 under 35 U.S.C. 103(a) as being unpatentable over JP 60-208495 ('495) in combination with JP 30-27175 ('175), DE 2,204,156 ('156) and DE 35 39 318 ('318) has been withdrawn in view of Applicant's remarks.

VIII. Claim 19 has been rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 60-208495 ('495)** in combination with **JP 30-27175 ('175)** and **DE 2,204,156 ('156)**.

The rejection of claim 19 under 35 U.S.C. 103(a) as being unpatentable over JP 60-208495 ('495) in combination with JP 30-27175 ('175) and DE 2,204,156 ('156) has been withdrawn in view of Applicant's remarks.

Response to Amendment

Claim Rejections - 35 USC § 112

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7

lines 1-2, it appears that the metals "Ag, Cu, Ni and Sn" are further limiting the metal recited in claim 1, line 5. However, it is unclear if it is. If it is not, then what is the

relationship between Ag, Cu, Ni and Sn and the metal recited in claim 1?

Claim Rejections - 35 USC § 103

I. Claims 1, 3-11 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Evans et al.** (US Patent No. 3,550,247) in combination with **JP 3027175** ('175).

Evans teaches a method of applying a metal coating (= col. 1, lines 15-16) to graphite (= graphitized filaments) [col. 2, lines 7-10; and col. 4, claim 2] comprising:

(a) etching (= an oxidizing treatment) said graphite in an etchant (= concentrated nitric acid) [col. 2, lines 11-29];

(b) Pd seeding said graphite (col. 4, lines 3-17); and then

(c) electroplating said graphite with a metal to form the metal coating on said graphite (col. 3, lines 30-35).

After the Pd seeding, a Pd coating is formed on said graphite (= a thin coating of palladium), and the method further comprising the following step between said Pd seeding and said electroplating: electroless plating said graphite to reinforce said Pd coating (col. 4, lines 18-20).

At least Ni or Cu is deposited in said is deposited in said electroless plating step (= electroless nickel and copper) [col. 4, lines 18-20].

Between said etching and said electroplating no ultrasound treatment is implemented (*inherent*).

The electroplating involves at least one of the following metals: Ag, Cu, Ni and Sn (= nickel and copper) [col. 3, lines 49-51].

The graphite comprises graphite particles (= graphite filaments) [col. 1, lines 46-49 ; and col. 2, lines 7-10].

The method of Evans differs from the instant invention because Evans does not disclose the following:

- a. Wherein the etching is anodic etching, as recited in claim 1.
- b. Wherein said anodic etching is done at a temperature in the range 20°C to 70°C, as recited in claim 11.

Evans teaches that the carbon filaments are subjected to an oxidizing treatment under strong oxidizing conditions before they are coated with the required metal (col. 2, lines 11-29).

Evans teaches that the strength of components made of nickel or chromium or their alloys which are subject to high temperatures, for example turbine blades, may be improved by the incorporation of carbon filaments (col. 3, lines 51-55).

Evans teaches that the carbon filaments are arranged in parallel formation in the composite (col. 4, claim 3).

Like Evans, JP '175 teaches etching graphitized carbon fiber. JP '175 teaches that the surface of the fiber is etched by anodizing in an electrolytic solution by providing the fiber as an anode and then sintering in an inert atmosphere to manufacture a carbon

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fiber having high orientation and tensile strength. Preferably, the electrolyte is LiOH, NaOH and KOH. Etching of the fiber is carried out at electrolyte concentration of 2-4 N at 50-70°C at an electrolyte current density of 0.1-1.0 mA/cm² (abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the oxidizing treatment described by Evans with wherein the etching is anodic etching; and wherein said anodic etching is done at a temperature in the range 20°C to 70°C because the oxidizing treatment disclosed by Evans would have inherently etched the graphitized filaments. The anodized graphitized filaments would have been functionally equivalent to the oxidized graphitized filaments in providing improved strength (tensile strength) and parallel formation (high orientation) in the composite as taught by JP '175 (abstract), as essential to Evans when incorporated into components made of nickel or chromium or their alloys which are subject to high temperatures, for example turbine blades (col. 3, lines 51-55).

The claims as presently written are open to the step of sintering in an inert atmosphere.

- c. Wherein said etchant is an alkaline etchant, as recited in claim 1.
- d. Wherein said alkaline etchant is a solution of at least one of NaOH and KOH having a concentration in the range of 10 to 70% by weight, as recited in claim 10.

JP '175 teaches that preferably, the electrolyte is LiOH, NaOH and KOH. Etching of the fiber is carried out at electrolyte concentration of 2-4 N at 50-70°C at an

electrolyte current density of 0.1-1.0 mA/cm² (abstract).

The Examiner does not know if 2-4 N is within the range of 10 to 70% by weight. However, the concentration of the alkaline etchant solution is a result-effective variable and one skilled in the art has the skill to calculate the concentration that would have determined the success of the desired reaction to occur, i.e., etching (MPEP § 2141.03 and § 2144.05(II)(B)).

The range of 10 to 70% by weight appears to be a mere optimization which solves no stated problems and produces no unexpected results, unless proven otherwise.

e. Between said anodic etching and a subsequent step: directly transferring said graphite, obtained with said anodic etching step, into water or a weak aqueous solution, as recited in claim 5.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method described by Evans with between said anodic etching and a subsequent step: directly transferring said graphite, obtained with said anodic etching step, into water or a weak aqueous solution because rinsing or washing the graphitized filaments with water would have prevented any residual solution on the graphitized filaments to carry over into the electroplating bath.

The reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not

necessary that the prior art suggest the combination to achieve the same advantage or result discovered by the Applicants. *In re Linter* 458 F.2d 1013, 173 USPQ 560 (CCPA 1972); *In re Dillon* 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990), *cert. denied*, 500 US 904 (1991); and MPEP § 2144.

f. Wherein said electroplating utilizes a current density in the range of 0.1 to 10 A/dm², as recited in claim 8.

JP '175 teaches an electrolyte current density of 0.1-1.0 mA/cm² (abstract).

The Examiner does not know if 0.1-1.0 mA/cm² is in the range of 0.1 to 10 A/dm². However, the current density is a result-effective variable and one skilled in the art has the skill to calculate the current density that would have determined the success of the desired reaction to occur (MPEP § 2141.03).

The range of 0.1 to 10 A/dm² appears to be a mere optimization which solves no stated problems and produces no unexpected results, unless proven otherwise.

g. Wherein a current duration in said electroplating is in the range of 5 to 90 minutes, as recited in claim 9.

Evans teaches electroplating (col. 3, lines 30-35). The electroplating disclosed by Evans inherently has a current duration.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the current duration described by Evans with

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wherein a current duration in said electroplating is in the range of 5 to 90 minutes because the current duration is a result-effective variable and one skilled in the art has the skill to calculate the current duration that would have determined the success of the desired reaction to occur, e.g., the thickness of the electroplated coating (MPEP § 2141.03).

The range of 5 to 90 minutes appears to be a mere optimization which solves no stated problems and produces no unexpected results, unless proven otherwise.

h. Wherein said anodic etching is performed with an applied electrical potential in the range of 4V to 20V, as recited in claim 14.

JP '175 teaches a current density in the range of 0.1-1 mA/dm² (abstract). The anodic etching disclosed by JP '175 inherently has an applied electrical potential.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the anodic etching described by JP '175 with wherein said anodic etching is performed with an applied electrical potential in the range of 4V to 20V because the applied electrical potential is a result-effective variable and one skilled in the art has the skill to calculate the applied electrical potential that would have determined the success of the desired reaction to occur (MPEP § 2141.03).

The range of 4V to 20V appears to be a mere optimization which solves no stated problems and produces no unexpected results, unless proven otherwise.

i. Wherein said anodic etching has a duration in the range of 5 to 90 minutes, with the actual duration inversely proportional to the applied electric field, as recited in claim 15.

The anodic etching disclosed by JP '175 inherently has a duration.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the anodic etching described by JP '175 with wherein said anodic etching has a duration in the range of 5 to 90 minutes, with the actual duration inversely proportional to the applied electric field because the duration and actually duration are result-effective variables and one skilled in the art has the skill to calculate the duration and actually duration that would have determined the success of the desired reaction to occur, i.e., etching (MPEP § 2141.03).

The range of 5 to 90 minutes, with the actual duration inversely proportional to the applied electric field appears to be a mere optimization which solves no stated problems and produces no unexpected results, unless proven otherwise.

II. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Evans et al.** (US Patent No. 3,550,247) in combination with **JP 3027175** ('175) as applied to claims 1, 3-11 and 14-15 above, and further in view of **DE 35 39 318** ('318).

Evans and JP '175 are as applied above and incorporated herein.

The method of Evans differs from the instant invention because Evans does not disclose wherein said graphite particles are bound by plastics, as recited in claim 12.

Evans teaches embedding the coated filaments in a metal matrix and the conditions which the reinforced metal article will meet in use (col. 3, lines 37-41).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the metal matrix described by Evans with wherein said graphite particles are bound by plastics because embedding the coated filaments in a plastic matrix would have depended upon the conditions which the reinforced article will meet in use (col. 3, lines 37-41).

DE '318 teaches a film made of plastic admixed with electrically conductive particles of graphite (abstract).

III. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Evans et al.** (US Patent No. 3,550,247) in combination with **JP 3027175** ('175) as applied to claims 1, 3-11 and 14-15 above, and further in view of **DE 27 22 304** ('304).

Evans and JP '175 are as applied above and incorporated herein.

The method of Evans differs from the instant invention because Evans does not disclose applying a solder pad to said metal coating as thus produced, as recited in claim 13.

Evans teaches metals which can benefit from reinforcement with carbon filaments in certain uses such as turbine blades (col. 3, lines 49-55).

Like Evans, DE '304 teaches turbine blades. DE '304 teaches soldering parts onto turbine blades (abstract).

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method described by Evans by applying a solder pad to said metal coating as thus produced because soldering would have joined parts to a turbine blades as taught by DE '304 (abstract).

IV. Claim **16** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Evans et al.** (US Patent No. 3,550,247) in combination with **JP 3027175** ('175).

Evans and JP '175 are as applied for reasons as discussed above and incorporated herein.

V. Claim **17** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Evans et al.** (US Patent No. 3,550,247) in combination with **JP 3027175** ('175) and **DE 35 39 318** ('318).

Evans, JP '175 and DE '318 are as applied for reasons as discussed above and incorporated herein.

VI. Claim **18** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Evans et al.** (US Patent No. 3,550,247) in combination with **JP 3027175** ('175) and **DE 27 22 304** ('304).

Evans, JP '175 and DE '304 are as applied for reasons as discussed above and incorporated herein.

VII. Claim **19** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Evans et al.** (US Patent No. 3,550,247) in combination with **JP 3027175** ('175).

Evans and JP '175 are as applied for reasons as discussed above and incorporated herein.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

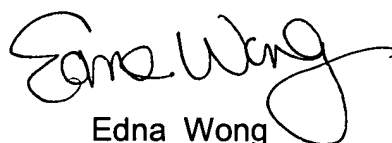
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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A handwritten signature in black ink, appearing to read "Edna Wong", with a stylized, flowing script.

Edna Wong
Primary Examiner
Art Unit 1753

EW
July 3, 2006